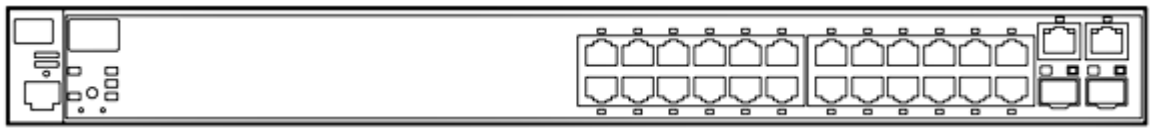
Overview



Models

HP ProCurve Switch 2610-48	J9088A
HP ProCurve Switch 2610-24	J9085A
HP ProCurve Switch 2610-24-PWR	J9087A
HP ProCurve Switch 2610-48-PWR	J9089A
HP ProCurve Switch 2610-24/12PWR	J9086A

Accessories

HP ProCurve 100-FX SFP-LC Transceiver	J9054B
NEW HP ProCurve 100-BX-D SFP-LC Transceiver	J9099B
NEW HP ProCurve 100-BX-U SFP-LC Transceiver	J9100B
HP ProCurve Gigabit-SX-LC Mini-GBIC	J4858C
HP ProCurve Gigabit-LX-LC Mini-GBIC	J4859C
HP ProCurve Gigabit-LH-LC Mini-GBIC	J4860C
HP ProCurve Gigabit 1000Base-T Mini-GBIC	J8177C
NEW HP ProCurve 1000-BX-D SFP-LC Mini-GBIC	J9142B
NEW HP ProCurve 1000-BX-U SFP-LC Mini-GBIC	J9143B
HP ProCurve 600 Redundant External Power Supply	J8168A
HP ProCurve 610 External Power Supply	J8169A
HP ProCurve Manager 2.3	-
HP ProCurve Network Immunity Manager 1.0 50-device license	J9060A
HP ProCurve Network Immunity Manager 1.0 +100-device license	J9061A
HP ProCurve Network Immunity Manager 1.0 unlimited-device license	J9062A

Introduction

The HP ProCurve Switch 2610 Series consists of five switches—the HP ProCurve Switch 2610-24 and 2610-48 provide 24 and 48 ports of 10/100 connectivity. The HP ProCurve Switch 2610-24 is fanless, providing quiet operation and making it ideal for deployment in open spaces. The HP ProCurve 2610- 24/12PWR, 2610-24-PWR, and 2610-48-PWR are IEEE 802.3af-compliant for Power over Ethernet (PoE) and provide up to 15.4 W for 12, 24, and 48 ports. The 2610-24/12PWR has 24 10/100 ports and provides 12 ports of PoE. All switches include two 10/100/1000Base-T ports and two mini-GBIC slots for Gigabit uplink connectivity. An optional redundant external power supply is also available to provide redundancy in the event of a power supply failure. With static routing, robust security and management features, free lifetime warranty, and free software updates, the 2610 series is a cost-effective solution for customers who are building converged enterprise edge networks.

Features and Benefits

Overview

Connectivity

- IEEE 802.3af Power over Ethernet: provides up to 15.4 W per port to IEEE 802.3af compliant PoE powered devices such as IP phones, wireless access points, and security cameras
- Pre-standard PoE support: detects and provides power to pre-standard PoE devices; see list of supported devices in the product FAQ at: www.procurve.com
- Gigabit Uplink Connectivity: two 10/100/1000BASE-T ports and two mini-GBIC ports for Connectivity such as Gigabit (SX, LX, LH, 1000BaseT) and 100Base-FX
- ProCurve Auto-MDIX: automatically adjusts for straight-through or crossover cables on all 10/100 ports
- Jumbo packet support: supports up to 9,216 byte frame size to improve performance of large data transfers

Resiliency and high availability

- IEEE 802.3ad Link Aggregation Protocol (LACP) and ProCurve trunking: support up to 24 trunks, each with up to 8 links (ports) per trunk
- IEEE 802.1s Multiple Spanning Tree: provides high link availability in multiple VLAN environments by allowing multiple spanning trees; provides legacy support for IEEE 802.1d and IEEE 802.1w
- Optional redundant power supply: provides uninterrupted power (provided by ProCurve 600 RPS/EPS)

Layer 2 switching

- VLAN support and tagging: supports the IEEE 802.1Q (4,096 VLAN IDs) and 256 VLANs simultaneously
- GARP VLAN Registration Protocol: allows automatic learning and dynamic assignment of VLANs

Layer 3 routing

- Basic IP routing: enables automatic routing to the connected VLANs and up to 16 static routes--including one default route--in IP networks

Security

- Multiple user authentication methods:
  - IEEE 802.1X: industry-standard method of user authentication using an IEEE 802.1X supplicant on the client in conjunction with a RADIUS server
  - Web-based authentication: similar to IEEE 802.1X, provides a browser-based environment to authenticate clients that do not support the IEEE 802.1X supplicant
  - MAC-based authentication: client is authenticated with the RADIUS server based on client's MAC address
- Authentication flexibility:
  - Multiple IEEE 802.1X users per port: provides authentication of up to 8 IEEE 802.1X users per port; prevents user "piggybacking" on another user's IEEE 802.1X authentication
  - Concurrent IEEE 802.1X and Web or MAC authentication schemes per port: switch port will accept any of IEEE 802.1X and either Web or MAC authentications
- Access control lists (ACLs): provide IP Layer 3 filtering based on source/destination IP address/subnet and source/destination TCP/UDP port number
- Identity-driven ACL: enables implementation of a highly granular and flexible access security policy and VLAN assignment specific to each authenticated network user
- Dynamic ARP protection: blocks ARP broadcasts from unauthorized hosts, preventing eavesdropping or theft of network data
- Port security: allows access only to specified MAC addresses, which can be learned or specified by the administrator
- MAC address lockout: prevents configured particular MAC addresses from connecting to the network
- Source-port filtering: allows only specified ports to communicate with each other
- RADIUS/TACACS+: eases switch management security administration by using a password authentication server
- Secure Shell (SSHv2): encrypts all transmitted data for secure, remote command-line interface (CLI) access over IP networks
- Port monitoring for network threats: Provides sampled port traffic using sFlow technology to the HP ProCurve Network

Overview

Immunity Manager application for Network Behavior Anomaly Detection (NBAD) analysis to detect threats and mitigate threats at the port where the threat originated

- Secure Sockets Layer (SSL): encrypts all HTTP traffic, allowing secure access to the browser-based management GUI in the switch
- Secure FTP: allows secure file transfer to/from the switch; protects against unwanted file downloads or unauthorized copying of switch configuration file
- Switch management logon security: can require either RADIUS or TACACS+ authentication for secure switch CLI logon
- DHCP protection: blocks DHCP packets from unauthorized DHCP servers, preventing denial-of-service attacks
- STP BPDU port protection: blocks Bridge Protocol Data Units (BPDUs) on ports that do not require BPDUs, preventing forged BPDU attacks
- STP Root Guard: protects root bridge from malicious attack or configuration mistakes

Convergence

- IEEE 802.1AB Link Layer Discovery Protocol (LLDP): automated device discovery protocol for easy mapping by network management applications
- LLDP-MED (Media Endpoint Discovery): a standard extension of LLDP that stores values for parameters such as QoS and VLAN to automatically configure network devices such as IP phones
- IP multicast snooping and data-driven IGMP: automatically prevents flooding of IP multicast traffic

Quality of Service (QoS)

- Class of Service (CoS): sets the IEEE 802.1p priority tag based on IP address, IP Type of Service (ToS), L3 protocol, TCP/UDP port number, source port, and DiffServ
- Layer 4 prioritization: enables prioritization based on TCP/UDP port numbers
- Traffic prioritization (IEEE 802.1p): allows real-time traffic classification into 8 priority levels mapped to 8 queues

Manageability

- RMON, XRMON, and sFlow: provide advanced monitoring and reporting capabilities for statistics, history, alarms, and events
- Uni-Directional Link Detection (UDLD): monitors a link between two switches and blocks the ports on both ends of the link if the link goes down at any point between the two devices
- Command authorization: leverages RADIUS to link a custom list of CLI commands to individual network administrator's login; also provides an audit trail
- Multiple configuration files: allow multiple configuration files to be stored to flash image
- Dual flash images: provides independent primary and secondary operating system files for backup while upgrading
- Stacking capability: single IP address management for a virtual stack of up to 16 switches, including the HP ProCurve Switch 2500 Series, 2510 Series, 2600 Series, 2610 Series, 2810 Series, 2900 Series, 3400cl Series, 3500l Series, 4200vl Series, 6108, 6200yl-24G-mGBIC, and 6400cl Series
- Friendly port names: allow assignment of descriptive names to ports
- Find-Fix-and-Inform: finds and fixes common network problems automatically, then informs administrator
- Software updates: free downloads from the Web
- Troubleshooting: ingress/egress port monitoring enables network problem-solving

Monitor and diagnostics

- Port mirroring: enables traffic on a port to be simultaneously sent to a network analyzer for monitoring

Industry-leading warranty*

- ProCurve Lifetime Warranty: for as long as you own the product, with next-business-day advance replacement (available in most countries).

Overview

- **Electronic and telephone support**: limited electronic and telephone support is available from HP. Refer to the HP Web site at: www.procurve.com/support for details on the support provided and the period during which support is available.
- **Software releases**: refer to the HP Web site at: www.procurve.com/support for details on the software releases provided and the period during which software releases are available.

* For as long as you own the product, with next-business-day advance replacement (available in most countries). The following hardware products and their related series modules have a one-year hardware warranty with extensions available: HP ProCurve Routing Switch 9300m Series, HP ProCurve Switch 8100fl Series, and HP ProCurve Network Access Controller 800. The following hardware mobility products have a one-year hardware limited warranty with extensions available: HP ProCurve M111 Client Bridge, HP ProCurve MSM3xx-R Access Points, HP ProCurve MSM7xx Mobility and Access Controllers, HP ProCurve RF Manager IDS/IPS Systems, HP ProCurve MSM Power Supplies, and HP ProCurve 1-Port Power Injector. Standalone software, upgrades, or licenses may have a different warranty duration. For details, refer to the ProCurve Software License, Warranty, and Support booklet at: http://www.procurve.com/warranty.

HP ProCurve Switch 2610-48 (J9088A)	**Ports**	48 auto-sensing 10/100 ports (IEEE 802.3 Type 10Base-T, IEEE 802.3u Type 100Base-TX); Media Type: Auto-MDIX; Duplex: half or full		
		1 RJ-45 serial console port		
		2 auto-sensing 10/100/1000 ports (IEEE 802.3 Type 10Base-T, IEEE 802.3u Type 100Base-TX, IEEE 802.3ab Type 1000Base-T); Duplex: 10Base-T/100Base-TX: half or full; 1000Base-T: full only		
		2 open mini-GBIC (SFP) slots		
	Physical characteristics	**Dimensions** (D x W x H)	9.3(d) x 17.4(w) x 1.73(h) in. (23.62 x 44.2 x 4.39 cm) (1U height)	
		Weight (fully loaded)	10.75 lb. (4.88 kg)	
	Memory and processor	**Processor type and speed**	MIPS @ 300 MHz	
		Flash capacity	16 MB	
		SDRAM	128 MB SDRAM	
		Packet buffer size	2 MB	
	Mounting	Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included); horizontal surface mounting only		
	Performance	**100 Mb Latency**	< 6.2 µs (LIFO)	
		1000 Mb Latency	< 4.4 µs (LIFO)	
		Throughput	up to 13.0 million pps	
		Routing/Switching capacity	17.6 Gbps	
		Routing table size	8,000 entries	
	Environment	**Operating temperature**	32°F to 122°F (0°C to 50°C)	
		Operating relative humidity	15% to 95% @ 104°F (40°C), non-condensing	
		Non-operating/ Storage temperature	-40°F to 158°F (-40°C to 70°C)	
		Non-operating/ Storage relative humidity	15% to 90% @ 149°F (65°C), non-condensing	
		Alitude	up to 10000 ft. (3 km)	
		Acoustic	**Power**	45 dB
			Pressure	36.2 dB; DIN 45635T.19 per ISO 7779
	Electrical characteristics	**Maximum heat dissipation**	285 BTU/hr (300.67 kJ/hr)	
		Voltage	100-127 / 200-240 VAC	
		Current	1.3 / 0.8 A	
		Power consumption	66 W	
		Frequency	50 / 60 Hz	
	Notes	Maximum power rating is the worst-case theoretical maximum power number with fully loaded PoE, 100% traffic, all ports plugged in, and all modules populated.		
	Safety	CSA 22.2 No. 60950; UL 60950; IEC 60950; EN 60950		

Emissions	FCC Class A; VCCI Class A; EN 55022/CISPR 22 Class A	
Immunity	EN	EN 55024, CISPR 24
	ESD	IEC 61000-4-2; 4 kV CD, 8 kV AD
	Radiated	IEC 61000-4-3; 3V/m
	EFT/Burst	IEC 61000-4-4; 1.0 kV(power line), 0.5kV (signal line)
	Surge	IEC 61000-4-5; 1 kV/2 kV AC
	Conducted	IEC 61000-4-6; 3V
	Power frequency magnetic field	IEC 61000-4-8; 1A/m, 50 or 60 Hz
	Voltage dips and interruptions	IEC 61000-4-11; >95% reduction, 0.5 period; 30% reduction, 25 periods
	Harmonics	EN 61000-3-2, IEC 61000-3-2
	Flicker	EN 61000-3-3, IEC 61000-3-3
Management	HP ProCurve Manager Plus; HP ProCurve Manager (included); command-line interface; Web browser; configuration menu; out-of-band management (serial RS- 32C)	
Notes	When using mini-GBICs with this product, mini-GBICs with revision "B" or later (product ends with the letter "B" or later, e.g., J4858B, J4859C) are required.	
Services	3-year, 4-hour onsite, 13x5 coverage for hardware (U4683E) 3-year, 4-hour onsite, 24x7 coverage for hardware (U4835E) 3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (U6321E) 3-year, 24x7 SW phone support, software updates (UF792E) Installation with minimum configuration, system-based pricing (U4826E) Installation with HP-provided configuration, system-based pricing (U4830E) Refer to the HP Web site at: www.procurve.com/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	
Standards and protocols	Device Management HTML and telnet management General Protocols IEEE 802.1D MAC Bridges IEEE 802.1p Priority IEEE 802.1Q VLANs IEEE 802.1v VLAN classification by Protocol and Port IEEE 802.1w Rapid Reconfiguration of Spanning Tree IEEE 802.3ad Link Aggregation Control Protocol (LACP) IEEE 802.3af Power over Ethernet IEEE 802.3x Flow Control RFC 768 UDP RFC 783 TFTP Protocol (revision 2) RFC 792 ICMP RFC 793 TCP RFC 826 ARP RFC 854 TELNET	

RFC 951 BOOTP
RFC 1542 BOOTP Extensions
RFC 2030 Simple Network Time Protocol (SNTP) v4
RFC 2131 DHCP
RFC 3046 DHCP Relay Agent Information Option

IP Multicast
RFC 3376 IGMPv3

MIBs
RFC 1213 MIB II
RFC 1493 Bridge MIB
RFC 2021 RMONv2 MIB
RFC 2096 IP Forwarding Table MIB
RFC 2613 SMON MIB
RFC 2618 RADIUS Client MIB
RFC 2665 Ethernet-Like-MIB
RFC 2668 802.3 MAU MIB
RFC 2674 802.1p and IEEE 802.1Q Bridge MIB
RFC 2737 Entity MIB (Version 2)
RFC 2863 The Interfaces Group MIB

Network Management
IEEE 802.1AB Link Layer Discovery Protocol (LLDP)
RFC 3164 BSD syslog Protocol
RFC 3176 sFlow
ANSI/TIA-1057 LLDP Media Endpoint Discovery (LLDP-MED)
SNMPv1/v2c/v3

Security
IEEE 802.1X Port Based Network Access Control
RFC 1492 TACACS+
Secure Sockets Layer (SSL)
SSHv1/SSHv2 Secure Shell

HP ProCurve Switch 2610-24 (J9085A)	**Ports**	24 auto-sensing 10/100 ports (IEEE 802.3 Type 10Base-T, IEEE 802.3u Type 100Base-TX); Media Type: Auto-MDIX; Duplex: half or full	
		1 RJ-45 serial console port	
		2 auto-sensing 10/100/1000 ports (IEEE 802.3 Type 10Base-T, IEEE 802.3u Type 100Base-TX, IEEE 802.3ab Type 1000Base-T); Duplex: 10Base-T/100Base-TX: half or full; 1000Base-T: full only	
		2 open mini-GBIC (SFP) slots	
	Physical characteristics	**Dimensions** (D x W x H)	9.3 x 17.4 x 1.73 in. (23.62 x 44.2 x 4.39 cm) (1U height)
		Weight (fully loaded)	10.2 lb. (4.63 kg)
	Memory and processor	**Processor type and speed**	MIPS @ 300 MHz
		Flash capacity	16 MB
		SDRAM	128 MB SDRAM
		Packet buffer size	1 MB
	Mounting	Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included); horizontal surface mounting only	
	Performance	**100 Mb Latency**	< 4.1 μs (LIFO)

	1000 Mb Latency	< 2.9 µs (LIFO)	
	Throughput	up to 9.5 million pps	
	Routing/Switching capacity	12.8 Gbps	
	Routing table size	8,000 entries	
Environment	Operating temperature	32°F to 122°F (0°C to 50°C)	
	Operating relative humidity	15% to 95% @ 104°F (40°C), non-condensing	
	Non-operating/ Storage temperature	-40°F to 158°F (-40°C to 70°C)	
	Non-operating/ Storage relative humidity	15% to 90% @ 149°F (65°C), non-condensing	
	Alitude	up to 10000 ft. (3 km)	
	Acoustic	Power	0 dB
		Pressure	0 dB No Fan
Electrical characteristics	Maximum heat dissipation	142 BTU/hr (149.81 kJ/hr)	
	Voltage	100-127 / 200-240 VAC	
	Current	0.8 / 0.4 A	
	Power consumption	41 W	
	Frequency	50 / 60 Hz	
Notes	Maximum power rating is the worst-case theoretical maximum power number with fully loaded PoE, 100% traffic, all ports plugged in, and all modules populated.		
Safety	CSA 22.2 No. 60950; UL 60950; IEC 60950; EN 60950		
Emissions	FCC Class A; VCCI Class A; EN 55022/CISPR 22 Class A		
Immunity	EN	EN 55024, CISPR 24	
	ESD	IEC 61000-4-2; 4 kV CD, 8 kV AD	
	Radiated	IEC 61000-4-3; 3V/m	
	EFT/Burst	IEC 61000-4-4; 1.0 kV(power line), 0.5kV (signal line)	
	Surge	IEC 61000-4-5; 1 kV/2 kV AC	
	Conducted	IEC 61000-4-6; 3V	
	Power frequency magnetic field	IEC 61000-4-8; 1A/m, 50 or 60 Hz	
	Voltage dips and interruptions	IEC 61000-4-11; >95% reduction, 0.5 period; 30% reduction, 25 periods	
	Harmonics	EN 61000-3-2, IEC 61000-3-2	
	Flicker	EN 61000-3-3, IEC 61000-3-3	
Management	HP ProCurve Manager Plus; HP ProCurve Manager (included); command-line interface; Web browser; configuration menu; out-of-band management (serial RS-232C)		
Notes	When using mini-GBICs with this product, mini-GBICs with revision "B" or later (product ends with the letter "B" or later, e.g., J4858B, J4859C) are required.		

Services	3-year, 4-hour onsite, 13x5 coverage for hardware (U4683E) 3-year, 4-hour onsite, 24x7 coverage for hardware (U4835E) 3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (U6321E) 3-year, 24x7 SW phone support, software updates (UF792E) Installation with minimum configuration, system-based pricing (U4826E) Installation with HP-provided configuration, system-based pricing (U4830E) Refer to the HP Web site at: www.procurve.com/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.
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		SNMPv1/v2c/v3 **Security** IEEE 802.1X Port Based Network Access Control RFC 1492 TACACS+ Secure Sockets Layer (SSL) SSHv1/SSHv2 Secure Shell		
HP ProCurve Switch 2610-24-PWR (J9087A)	**Ports**	24 auto-sensing 10/100 ports (IEEE 802.3 Type 10Base-T, IEEE 802.3u Type 100Base-TX); Media Type: Auto-MDIX; Duplex: half or full 1 RJ-45 serial console port 2 auto-sensing 10/100/1000 ports (IEEE 802.3 Type 10Base-T, IEEE 802.3u Type 100Base-TX, IEEE 802.3ab Type 1000Base-T); Duplex: 10Base-T/100Base-TX: half or full; 1000Base-T: full only 2 open mini-GBIC (SFP) slots		
	Physical characteristics	**Dimensions** (D x W x H)	12.5(d) x 17.4(w) x 1.73(h) in. (31.75 x 44.2 x 4.39 cm) (1U height)	
		Weight (fully loaded)	15.05 lb. (6.83 kg), Fully loaded	
	Memory and processor	**Processor type and speed**	MIPS @ 300 MHz	
		Flash capacity	16 MB	
		SDRAM	128 MB SDRAM	
		Packet buffer size	1 MB	
	Mounting	Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included); horizontal surface mounting only		
	Performance	**100 Mb Latency**	< 4.1 μs (LIFO)	
		1000 Mb Latency	< 2.9 μs (LIFO)	
		Throughput	up to 9.5 million pps	
		Routing/Switching capacity	12.8 Gbps	
		Routing table size	8,000 entries	
	Environment	**Operating temperature**	32°F to 122°F (0°C to 50°C)	
		Operating relative humidity	15% to 95% @ 104°F (40°C), non-condensing	
		Non-operating/ Storage temperature	-40°F to 158°F (-40°C to 70°C)	
		Non-operating/ Storage relative humidity	15% to 90% @ 149°F (65°C), non-condensing	
		Alitude	up to 10000 ft. (3 km)	
		Acoustic	**Power**	64 dB
			Pressure	57 dB; DIN 45635T.19 per ISO 7779
	Electrical characteristics	**Maximum heat dissipation**	410 BTU/hr (432.55 kJ/hr), (Switch only BTU/hr - 410, combined switch + maxPoE devices at 15.4 W - 2281 BTU/hr)	
		Voltage	100-127 / 200-240 VAC	

	Current	7.0 / 3.5 A
	Power consumption	77 W
	Frequency	50 / 60 Hz
Notes	Maximum power rating is the worst-case theoretical maximum power number with fully loaded PoE, 100% traffic, all ports plugged in, and all modules populated. Power consumption: 77 W without PoE; 527 W with PoE.	
Safety	CSA 22.2 No. 60950; UL 60950; IEC 60950; EN 60950	
Emissions	FCC Class A; VCCI Class A; EN 55022/CISPR 22 Class A	
Immunity	EN	EN 55024, CISPR 24
	ESD	IEC 61000-4-2; 4 kV CD, 8 kV AD
	Radiated	IEC 61000-4-3; 3V/m
	EFT/Burst	IEC 61000-4-4; 1.0 kV(power line), 0.5kV (signal line)
	Surge	IEC 61000-4-5; 1 kV/2 kV AC
	Conducted	IEC 61000-4-6; 3V
	Power frequency magnetic field	IEC 61000-4-8; 1A/m, 50 or 60 Hz
	Voltage dips and interruptions	IEC 61000-4-11; >95% reduction, 0.5 period; 30% reduction, 25 periods
	Harmonics	EN 61000-3-2, IEC 61000-3-2
	Flicker	EN 61000-3-3, IEC 61000-3-3
Management	HP ProCurve Manager Plus; HP ProCurve Manager (included); command-line interface; Web browser; configuration menu; out-of-band management (serial RS-232C)	
Notes	When using mini-GBICs with this product, mini-GBICs with revision "B" or later (product ends with the letter "B" or later, e.g., J4858B, J4859C) are required.	
Services	3-year, 4-hour onsite, 13x5 coverage for hardware (U4683E) 3-year, 4-hour onsite, 24x7 coverage for hardware (U4835E) 3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (U6321E) 3-year, 24x7 SW phone support, software updates (UF792E) Installation with minimum configuration, system-based pricing (U4826E) Installation with HP-provided configuration, system-based pricing (U4830E) Refer to the HP Web site at: www.procurve.com/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	
Standards and protocols	Device Management HTML and telnet management General Protocols IEEE 802.1D MAC Bridges IEEE 802.1p Priority IEEE 802.1Q VLANs IEEE 802.1v VLAN classification by Protocol and Port IEEE 802.1w Rapid Reconfiguration of Spanning Tree	

IEEE 802.3ad Link Aggregation Control Protocol (LACP)
IEEE 802.3af Power over Ethernet
IEEE 802.3x Flow Control
RFC 768 UDP
RFC 783 TFTP Protocol (revision 2)
RFC 792 ICMP
RFC 793 TCP
RFC 826 ARP
RFC 854 TELNET
RFC 951 BOOTP
RFC 1542 BOOTP Extensions
RFC 2030 Simple Network Time Protocol (SNTP) v4
RFC 2131 DHCP
RFC 3046 DHCP Relay Agent Information Option

IP Multicast
RFC 3376 IGMPv3

MIBs
RFC 1213 MIB II
RFC 1493 Bridge MIB
RFC 2021 RMONv2 MIB
RFC 2096 IP Forwarding Table MIB
RFC 2613 SMON MIB
RFC 2618 RADIUS Client MIB
RFC 2665 Ethernet-Like-MIB
RFC 2668 802.3 MAU MIB
RFC 2674 802.1p and IEEE 802.1Q Bridge MIB
RFC 2737 Entity MIB (Version 2)
RFC 2863 The Interfaces Group MIB

Network Management
IEEE 802.1AB Link Layer Discovery Protocol (LLDP)
RFC 3164 BSD syslog Protocol
RFC 3176 sFlow
ANSI/TIA-1057 LLDP Media Endpoint Discovery (LLDP-MED)
SNMPv1/v2c/v3

Security
IEEE 802.1X Port Based Network Access Control
RFC 1492 TACACS+
Secure Sockets Layer (SSL)
SSHv1/SSHv2 Secure Shell

HP ProCurve Switch 2610-48-PWR (J9089A)

Ports

48 auto-sensing 10/100 ports (IEEE 802.3 Type 10Base-T, IEEE 802.3u Type 100Base-TX); Media Type: Auto-MDIX; Duplex: half or full

1 RJ-45 serial console port

2 auto-sensing 10/100/1000 ports (IEEE 802.3 Type 10Base-T, IEEE 802.3u Type 100Base-TX, IEEE 802.3ab Type 1000Base-T); Duplex: 10Base-T/100Base-TX: half or full; 1000Base-T: full only

2 open mini-GBIC (SFP) slots

Physical characteristics

Dimensions (D x W x H)	13.5 x 17.4 x 1.73 in. (34.29 x 44.2 x 4.39 cm) (1U height)
Weight (fully loaded)	16.7 lb. (7.58 kg)

Technical Specifications

Memory and processor	Processor type and speed	MIPS @ 300 MHz	
	Flash capacity	16 MB	
	SDRAM	128 MB SDRAM	
	Packet buffer size	2 MB	
Mounting	Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included); horizontal surface mounting only		
Performance	100 Mb Latency	< 6.2 µs (LIFO)	
	1000 Mb Latency	< 4.4 µs (LIFO)	
	Throughput	up to 13.0 million pps	
	Routing/Switching capacity	17.6 Gbps	
	Routing table size	8,000 entries	
Environment	Operating temperature	32°F to 122°F (0°C to 50°C)	
	Operating relative humidity	15% to 95% @ 104°F (40°C), non-condensing	
	Non-operating/ Storage temperature	-40°F to 158°F (-40°C to 70°C)	
	Non-operating/ Storage relative humidity	15% to 90% @ 149°F (65°C), non-condensing	
	Alitude	up to 10000 ft. (3 km)	
	Acoustic	Power	63.6 dB
		Pressure	56.6 dB; DIN 45635T.19 per ISO 7779
Electrical characteristics	Maximum heat dissipation	410 BTU/hr (432.55 kJ/hr), (Switch only BTU/hr - 410, combined switch + maxPoE devices at 15.4 W - 2281 BTU/hr)	
	Voltage	100-127 / 200-240 VAC	
	Current	7.0 / 3.5 A	
	Power consumption	96 W	
	Frequency	50 / 60 Hz	
Notes	Maximum power rating is the worst-case theoretical maximum power number with fully loaded PoE, 100% traffic, all ports plugged in, and all modules populated. Power consumption: 96 W without PoE; 590 W with PoE.		
Safety	CSA 22.2 No. 60950; UL 60950; IEC 60950; EN 60950		
Emissions	FCC Class A; VCCI Class A; EN 55022/CISPR 22 Class A		
Immunity	EN	EN 55024, CISPR 24	
	ESD	IEC 61000-4-2; 4 kV CD, 8 kV AD	
	Radiated	IEC 61000-4-3; 3V/m	
	EFT/Burst	IEC 61000-4-4; 1.0 kV(power line), 0.5kV (signal line)	
	Surge	IEC 61000-4-5; 1 kV/2 kV AC	

	Conducted	IEC 61000-4-6; 3V
	Power frequency magnetic field	IEC 61000-4-8; 1A/m,50 or 60 Hz
	Voltage dips and interruptions	IEC 61000-4-11; >95% reduction, 0.5 period; 30% reduction, 25 periods
	Harmonics	EN 61000-3-2, IEC 61000-3-2
	Flicker	EN 61000-3-3, IEC 61000-3-3
Management		HP ProCurve Manager Plus; HP ProCurve Manager (included); command-line interface; Web browser; configuration menu; out-of-band management (serial RS-232C)
Notes		When using mini-GBICs with this product, mini-GBICs with revision "B" or later (product ends with the letter "B" or later, e.g., J4858B, J4859C) are required.
Services		3-year, 4-hour onsite, 13x5 coverage for hardware (U4683E) 3-year, 4-hour onsite, 24x7 coverage for hardware (U4835E) 3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (U6321E) 3-year, 24x7 SW phone support, software updates (UF792E) Installation with minimum configuration, system-based pricing (U4826E) Installation with HP-provided configuration, system-based pricing (U4830E) Refer to the HP Web site at: www.procurve.com/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.
Standards and protocols		**Device Management** HTML and telnet management **General Protocols** IEEE 802.1D MAC Bridges IEEE 802.1p Priority IEEE 802.1Q VLANs IEEE 802.1v VLAN classification by Protocol and Port IEEE 802.1w Rapid Reconfiguration of Spanning Tree IEEE 802.3ad Link Aggregation Control Protocol (LACP) IEEE 802.3af Power over Ethernet IEEE 802.3x Flow Control RFC 768 UDP RFC 783 TFTP Protocol (revision 2) RFC 792 ICMP RFC 793 TCP RFC 826 ARP RFC 854 TELNET RFC 951 BOOTP RFC 1542 BOOTP Extensions RFC 2030 Simple Network Time Protocol (SNTP) v4 RFC 2131 DHCP RFC 3046 DHCP Relay Agent Information Option **IP Multicast** RFC 3376 IGMPv3 **MIBs**

RFC 1213 MIB II
RFC 1493 Bridge MIB
RFC 2021 RMONv2 MIB
RFC 2096 IP Forwarding Table MIB
RFC 2613 SMON MIB
RFC 2618 RADIUS Client MIB
RFC 2665 Ethernet-Like-MIB
RFC 2668 802.3 MAU MIB
RFC 2674 802.1p and IEEE 802.1Q Bridge MIB
RFC 2737 Entity MIB (Version 2)
RFC 2863 The Interfaces Group MIB

Network Management

IEEE 802.1AB Link Layer Discovery Protocol (LLDP)
RFC 3164 BSD syslog Protocol
RFC 3176 sFlow
ANSI/TIA-1057 LLDP Media Endpoint Discovery (LLDP-MED)
SNMPv1/v2c/v3

Security

IEEE 802.1X Port Based Network Access Control
RFC 1492 TACACS+
Secure Sockets Layer (SSL)
SSHv1/SSHv2 Secure Shell

HP ProCurve Switch 2610-24/12PWR (J9086A)	**Ports**	24 auto-sensing 10/100 ports (IEEE 802.3 Type 10Base-T, IEEE 802.3u Type 100Base-TX); Media Type: Auto-MDIX; Duplex: half or full	
		1 RJ-45 serial console port	
		2 auto-sensing 10/100/1000 ports (IEEE 802.3 Type 10Base-T, IEEE 802.3u Type 100Base-TX, IEEE 802.3ab Type 1000Base-T); Duplex: 10Base-T/100Base-TX: half or full; 1000Base-T: full only	
		2 open mini-GBIC (SFP) slots	
	Physical characteristics	**Dimensions** (D x W x H)	9.3 x 17.4 x 1.73 in. (23.62 x 44.2 x 4.39 cm) (1U height)
		Weight (fully loaded)	7.5 lb. (3.4 kg)
	Memory and processor	**Processor type and speed**	MIPS @ 300 MHz
		Flash capacity	16 MB
		SDRAM	128 MB SDRAM
		Packet buffer size	1 MB
	Mounting	Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included); horizontal surface mounting only	
	Performance	**100 Mb Latency**	< 4.1 μs
		1000 Mb Latency	< 2.9 μs
		Throughput	up to 9.5 million pps
		Routing/Switching capacity	12.8 Gbps
		Routing table size	8,000 entries
	Environment	**Operating temperature**	32°F to 122°F (0°C to 50°C)

	Operating relative humidity	15% to 95% @ 104°F (40°C), non-condensing	
	Non-operating/ Storage temperature	-40°F to 158°F (-40°C to 70°C)	
	Non-operating/ Storage relative humidity	15% to 90% @ 149°F (65°C), non-condensing	
	Alitude	up to 10000 ft. (3 km)	
	Acoustic	Power	46 dB
		Pressure	38.4 dB; DIN 45635T.19 per ISO 7779
Electrical characteristics	Maximum heat dissipation	181 BTU/hr (190.96 kJ/hr), (Switch only BTU/hr - 181, combined switch + maxPoE devices at 15.4 W - 827 BTU/hr)	
	Voltage	100-127 / 200-240 VAC	
	Current	3.3 / 1.7 A	
	Power consumption	62 W	
	Frequency	50 / 60 Hz	
Notes	Maximum power rating is the worst-case theoretical maximum power number with fully loaded PoE, 100% traffic, all ports plugged in, and all modules populated. Power consumption: 62 W without PoE; 189 W with PoE.		
Safety	CSA 22.2 No. 60950; UL 60950; IEC 60950; EN 60950		
Emissions	FCC Class A; VCCI Class A; EN 55022/CISPR 22 Class A		
Immunity	EN	EN 55024, CISPR 24	
	ESD	IEC 61000-4-2; 4 kV CD, 8 kV AD	
	Radiated	IEC 61000-4-3; 3V/m	
	EFT/Burst	IEC 61000-4-4; 1.0 kV(power line), 0.5kV (signal line)	
	Surge	IEC 61000-4-5; 1 kV/2 kV AC	
	Conducted	IEC 61000-4-6; 3V	
	Power frequency magnetic field	IEC 61000-4-8; 1A/m,50 or 60 Hz	
	Voltage dips and interruptions	IEC 61000-4-11; >95% reduction, 0.5 period; 30% reduction, 25 periods	
	Harmonics	EN 61000-3-2, IEC 61000-3-2	
	Flicker	EN 61000-3-3, IEC 61000-3-3	
Management	HP ProCurve Manager Plus; HP ProCurve Manager (included); command-line interface; Web browser; configuration menu; out-of-band management (serial RS-232C)		
Notes	When using mini-GBICs with this product, mini-GBICs with revision "B" or later (product ends with the letter "B" or later, e.g., J4858B, J4859C) are required.		
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3-year, 4-hour onsite, 24x7 coverage for hardware (U4835E)
3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (U6321E)
3-year, 24x7 SW phone support, software updates (UF792E)
Installation with minimum configuration, system-based pricing (U4826E)
Installation with HP-provided configuration, system-based pricing (U4830E)

Refer to the HP Web site at: www.procurve.com/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.

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RFC 793 TCP
RFC 826 ARP
RFC 854 TELNET
RFC 951 BOOTP
RFC 1542 BOOTP Extensions
RFC 2030 Simple Network Time Protocol (SNTP) v4
RFC 2131 DHCP
RFC 3046 DHCP Relay Agent Information Option
IP Multicast
RFC 3376 IGMPv3
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